Attachment 3. FY 2005 NASQAN Operations

In general, the sampling strategies remain unchanged from previous years. The cost of event samples will be determined in July and provided as a separate allocation if sampling warrants. Electronic copies of guidelines for all sampling procedures are available through the NASQAN homepage http://water.usgs.gov/nasqan. The web page provides technical support for field crews; i.e., sampling and processing protocols for routine and quality-control samples, sample coding guidelines, and descriptions of NASQAN laboratory schedules.

NASQAN maintains a secondary level of data review, based on national data-quality objectives, that complements the District data review process. District personnel are responsible for data review, rerun requests, and timely responses to contamination problems and other data issues. The national data review process provides a means to track the review status of questionable data, to receive input from the districts to the national database via interactive web forms, and to provide technical support toward resolving data-quality issues. Information on the national data review process, including criteria definitions, instructions, and the individual station pages can be accessed from the following URL: http://oregon.usgs.gov/uo/nasqan/qa.req.html.

Quality-Control Samples

The specific types of QC samples to be collected at each NASQAN station are described in the sampling strategies provided by the Basin Coordinators. Additionally, laboratory equipment blanks must be analyzed once per year for all equipment that is used to collect and process NASQAN samples. Guidelines for collection, processing, and coding of QC samples are provided on the NASQAN home page. Please carefully follow the coding instructions for all QC samples. Consistency across the network is necessary for efficient analysis of the QC data.

Laboratory Information

Basin Accounts

The following basin accounts have been established for analysis of NASQAN chemistry and suspended sediment samples:

Yukon Basin 4565-9CE10
Colorado Basin 4565-9CE20
Columbia Basin 4565-9CE30
Mississippi Basin 4565-9CE40
Rio Grande Basin 4565-9CE50

Please use the appropriate account number on your Analytical Service Request (ASR) and sediment analysis request for all NASQAN samples.

Laboratory Schedules

Laboratory schedules for analysis of NASQAN samples at the National Water Quality Laboratory (NWQL) are listed below. There are several choices for routine analyses of both nutrient and major ions, depending upon expected concentrations; however, we do not expect changes from last year. **Please select the appropriate schedule for your stations to avoid nondetects.** If you have questions about this issue, think the schedule should change from past years, please contact your Basin Coordinator first.

Schedule
997 Nutrients, particulate carbon, nitrogen, organic carbon
1010 Nutrients (low-level ortho-P), particulate carbon, nitrogen, organic carbon
1069 Nutrients (low-level P and N), particulate carbon, nitrogen, organic carbon
998 Major ions and miscellaneous trace elements (conductance < 2000)

1201 Major ions and miscellaneous trace elements (conductance > 2000)
1050 Trace elements analyzed by ICP/MS
2001 Pesticides in filtered water, extracted by NWQL
1637 Chlorophyll-a and phaeophytin
452 Nutrient blank
1675 Organic carbon blank
1674 Routine major ion and trace element blank
1673 Expanded trace element blank
Updated information from the NWQL on sample requirements can be obtained from the Technical Support section of the NASQAN home page.

Sediment Laboratories
Sediment samples from all stations within a single basin should be submitted to one of two central sediment laboratories, described below. A single composite sample will be submitted for each station sample. This is a change from 2003 when duplicate sediment samples were collected. Samples may be composited in the field before being sent to the sediment lab.

Iowa District Sediment Laboratory:
Mississippi Basin
Rio Grande Basin
Cascade Volcanic Observatory:
Colorado Basin
Columbia Basin
Yukon Basin

Trace element sampling
Sampling for trace elements, both dissolved (schedule 1050) and suspended (large-volume sample for Art Horowitz) will be maintained at a subset of stations (Attachment 1). Sampling crews should be reminded that every effort must be made to collect enough water to accumulate at least 1 gram of sediment when processed. Art's lab sends email back after analysis to inform the crews how much sediment was in the previous sample. This should be used as a guide, along with knowledge of the site, to determine how much water needs to be collected each trip. Please make sure that all samples submitted are accompanied by an email to Art's lab to let them know the sample is coming.

Isotope samples
Field crews at all NASQAN stations should continue to collect filtered aliquots from the composite water sample for analysis of stable isotopes of water. These samples should be packaged securely and sent directly to Ty Coplen for analysis. He supplies the 60-mL glass bottles for sample collection. Information on the specific sampling and processing protocols, and the address for mailing those sampling can be found on the NASQAN home page.

Additionally, crews should collect two filters for analysis of stable isotopes in particulate organic matter (POM): the glass fiber filter from filtration of pesticide samples, and a separate glass fiber filter from the filtration of particulate carbon/nitrogen. These filters should be clearly labeled and stored in the freezer; approximately quarterly, these filters should be sent to Carol Kendall. ***For stations in the Mississippi and Yukon Basin only***: an additional filtered sample will be collected and sent to Carol Kendall with the POM filters described above. The sample is filtered through the 0.45 capsule filter into two 20 mL scintillation vials, which will be provided by the Basin Coordinator (Richard Coupe or Tim Brabets). After filtering, the sample should be clearly labeled and frozen as soon as possible. Further details on the collection and mailing of these samples can be found on the NASQAN home page.